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Service Manual

ORDER NO.
RRV2721

POWERED SPEAKER SYSTEM

S-W80S-J

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
S-W80S-J	MLXTW	AC220-230V	

● **This service manual should be used together with the following manual(s):**

Model No.	Order No.	Remarks
S-W80S/MLXTW	RRV2591	

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
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PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
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CONTRAST OF MISCELLANEOUS PARTS

NOTES :
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screw adjacent to ▼ mark on the product are used for disassembly.*
- *Reference Nos. indicate the pages and Nos. in the service manual for the base model.*

■ CONTRAST TABLE

S-W80S-J/MLXTW and S-W80S/MLXTW are constructed the same except for the following:

Ref. No.	Mark	Symbol and Description	Part No.		Remarks
			S-W80S/MLXTW	S-W80S-J/MLXTW	
P7 - 5		**PACKING** Packing Case	SHG2403	SHG2473	

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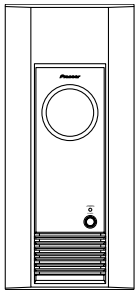
Service Manual



ORDER NO.
RRV2591

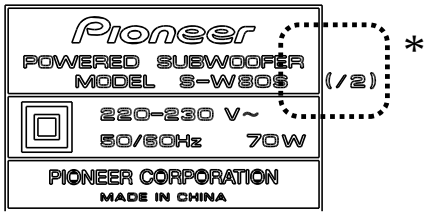
POWERED SPEAKER SYSTEM

S-W80S

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	S-W80S		
MLXTW	◯	AC220-230V	

- S-80S/MLXTW(New Model) is another manuafcture maker model from S-W80S/MLXCN(Old Model). There is no interchangeability of service parts between New and Old models. Refer to the 7.2 MODEL DISTINCTION about the distinction details of the New and Old models.



S-W80S(New) model label

* Refer to the Old model(S-W80S/MLXCN) service manual(Order No. RRV2407) when there is no "(/2)" mark outside the model label.

For details, refer to "Important symbols for good services" on the next page.

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SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

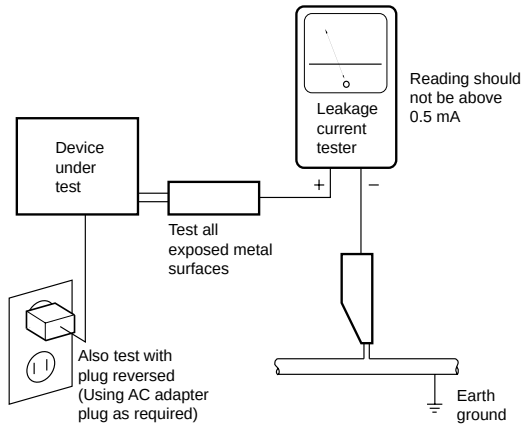
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.


Reading should not be above 0.5 mA
Leakage current tester
Device under test
+
–
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

[Important symbols for good services]
In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely.
When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety

You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments

To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning

For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws

To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts

Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount.For replacement parts or tools, the prescribed ones should be used.

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1. SPECIFICATIONS

Cabinet ..... Floor type with bass-reflex system
Speaker (Magnetically shielded type) ..... 16 cm cone type
Power Amplifier
  Continous Power Output (RMS) ..... 80 W/8 Ω (30 – 200 Hz)
Total Harmonic Distortion ..... 0.5 %
(30 – 200 Hz, 8 Ω, 20 W)

- Above specifications are for when power supply is 230 V.

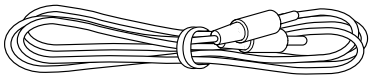
Input (sensitivity at 100 Hz/impedance)
  SPEAKER LEVEL ..... 1.6 V + 1.6 V/15 kΩ
(both channels in-phase)
  LINE LEVEL (RCA jack) ..... 160 mV/50 kΩ
Turnover Frequency ..... 50 – 200 Hz (continuously variable)
Outline Dimension ..... 190 (W) x 420 (H) x 430 (D) mm
Weight (without package) ..... 13.7 kg
Power Requirements ..... 220 – 230 V ∿, 50/60 Hz
Power Consumption ..... 70 W
Power Consumption in Standby mode ..... 1 W
Accessories ..... Speaker cords x 2
RCA plug cord x 1
Operating instructions x 1

NOTE:
Specifications and design subject to possible modification without notice, due to improvements.

■ ACCESSORIES

● Speaker Cords x2
4999A-869 (L=3m)

● RCA Plug Cord x1
VRC0001-A06 (L=3m)

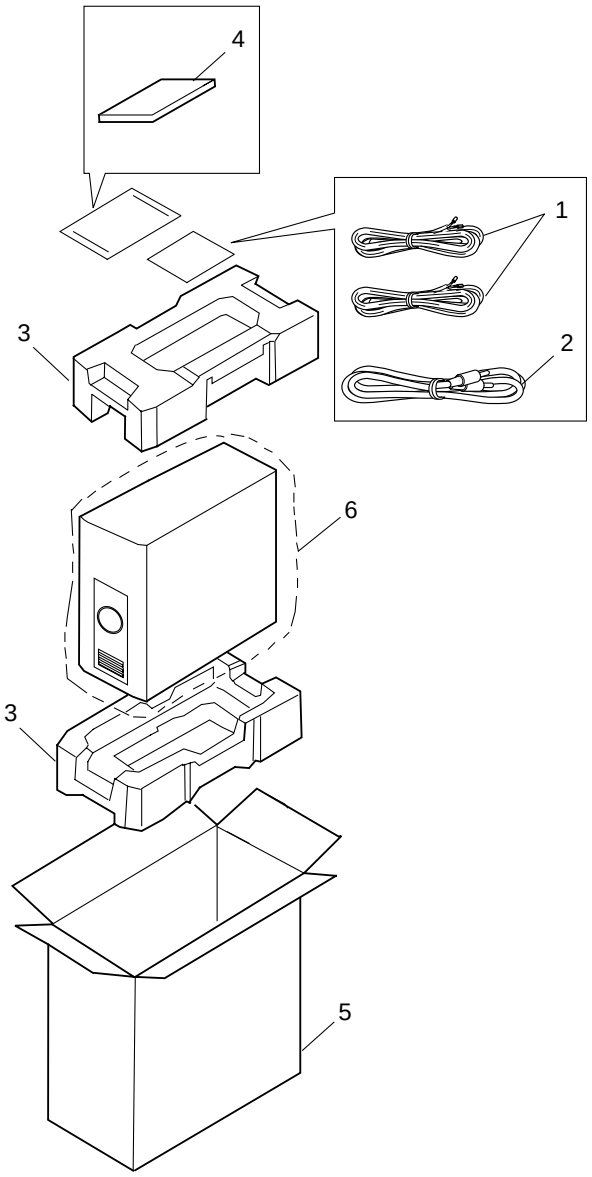


● Operating Instructions x1
SRD1236

2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

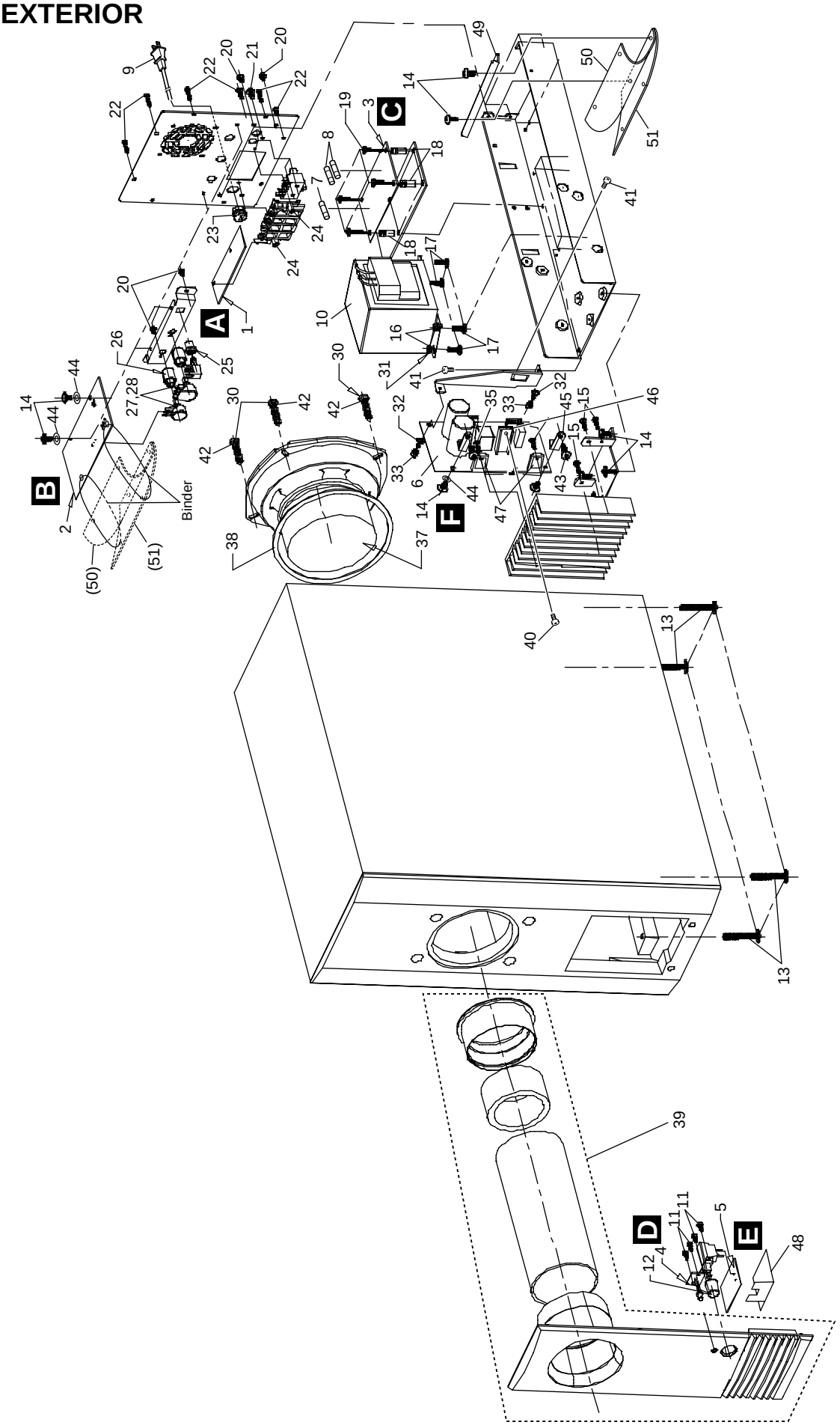
2.1 PACKING



■ PACKING PARTS LIST

Mark	No.	Description	Part No.
	1	Speaker Cord	4999A-869
	2	RCA Pin Cord	VRC0001-A06
	3	Protector	ITF0096C001
	4	Operating Instructions (English, Chinese,Spanish)	SRD1236
	5	Packing Case	SHG2403
	6	Polyethylene Bag	IVP0001-156

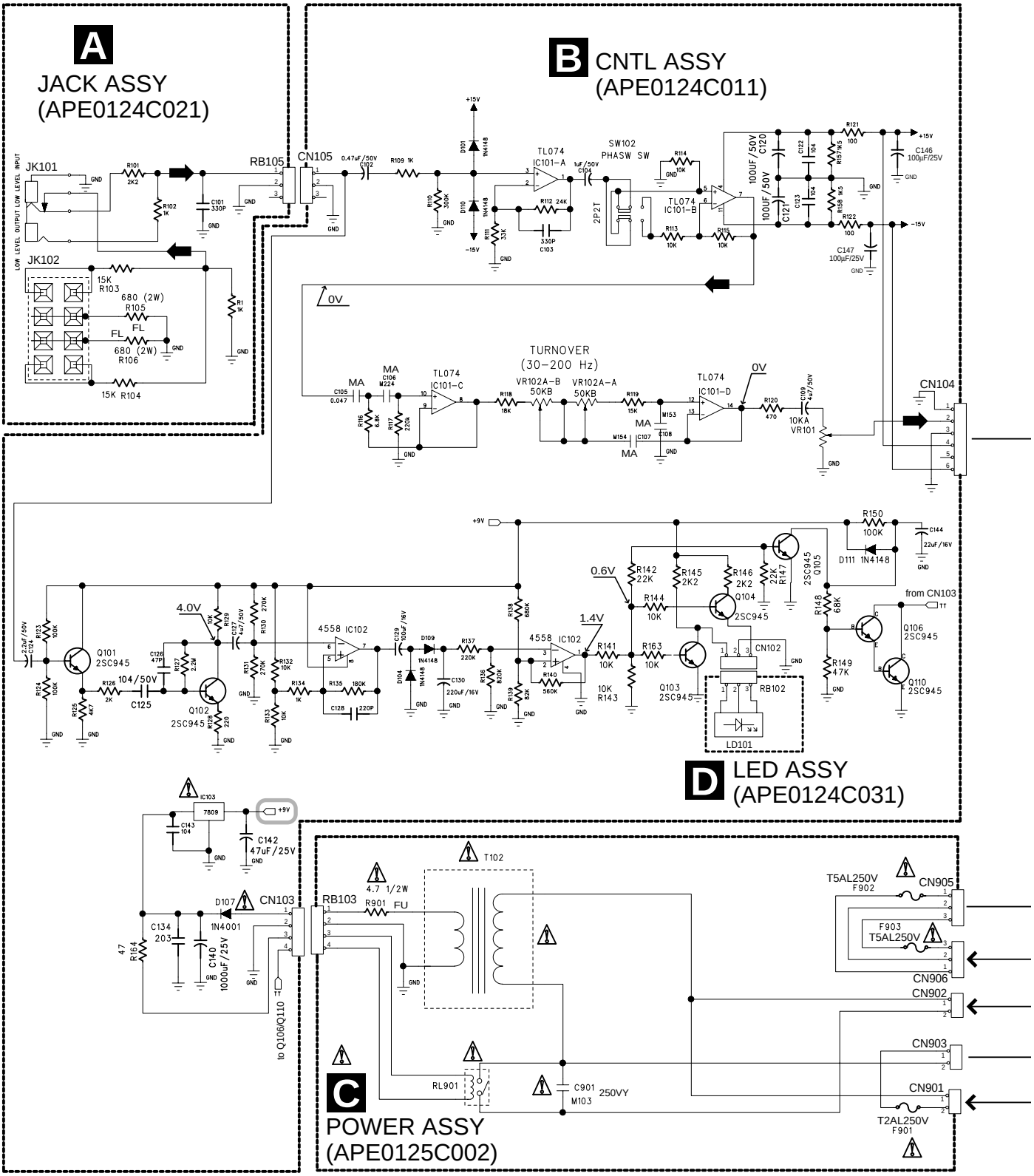
2.2 EXTERIOR



■ EXTERIOR PARTS LIST

Mark	No.	Description	Part No.
	1	JACK ASSY	APE0124C021
	2	CNTL ASSY	APE0124C011
⚠	3	POWER ASSY	APE0125C002
	4	LED ASSY	APE0124C031
⚠	5	SW. ASSY	APE0125C021
⚠	6	AMP ASSY	APE0148C001
⚠	7	Fuse (T2AL250V)	KSA2200-104
⚠	8	Fuse (T5AL250V)	KSA2500-104
⚠	9	AC Power Cord	2559-022G22
⚠	10	Power Transformer	TTI2301C007
	11	Screw	PPZ26P080FMC
	12	Power Switch Knob	BPK6016C001
	13	Screw	H110509-330
	14	Screw	AMZ30P060FZK
	15	Screw	H110303-310
	16	Washer	WH40FCR
	17	Screw	H110504-110
	18	Spacer	DSS0003-003
	19	Screw	AMZ30P200FMC
	20	Screw	PMZ30P060FZK
	21	Screw	H121103-308
	22	Screw	H011103-316
	23	Bushing	DBU0002-101
	24	Screw	PPZ30P120FZK
	25	Phase Knob	BPK8024C001
	26	Volume Knob	BPK5028C001
	27	Washer	WA72F120M050
	28	Nut	NK70FMC
	29	• • • • •	
	30	Screw	H010903-320
	31	Nut	NB40FMC
	32	Screw	AMZ30P100FZK
	33	Spacer	DSS0002-001
	34	• • • • •	
	35	Screw	H121003-310
	36	• • • • •	
	37	Speaker	FTM8065-331
	38	Sponge	IVE0087C001
	39	Port Tube Assy	AFA0034C001
	40	Screw	H121003-308
	41	Screw	PMZ30P080FZK
	42	Washer	HWT7343-310
	43	Screw	PMZ30P100FZK
	44	Washer	HWF1032-610
	45	Bracket	GSE128C001
	46	Heat Sink	GAL0107-004
	47	Mica Sheet	GMI0006-001
	48	Insulating Sheet	BNP0057C001
	49	Bracket	GST0022C001
	50	Sield Sheet	GCS0004C001
	51	Insulating Sheet	BNP0060C001

3. SCHEMATIC DIAGRAM



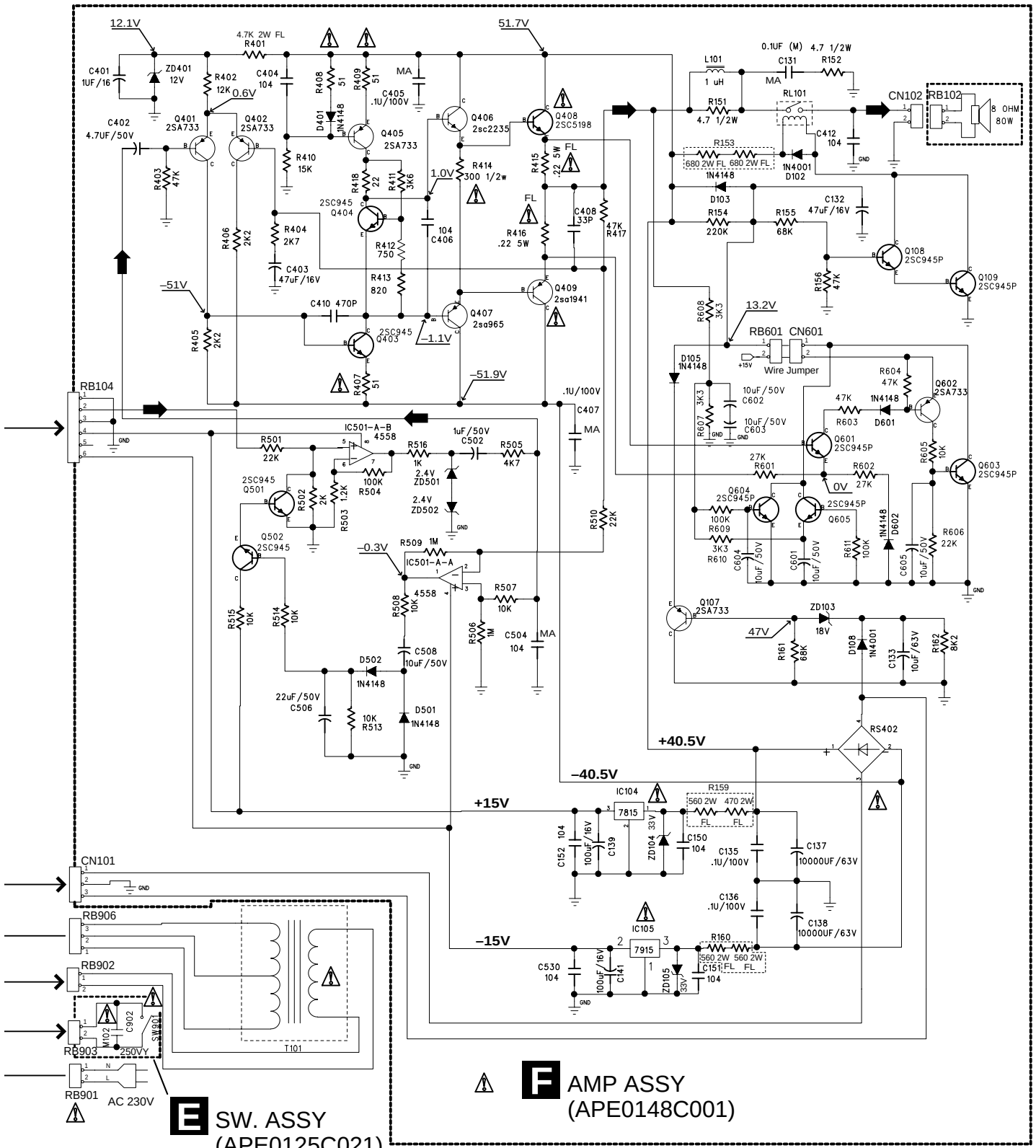
• NOTE FOR FUSE REPLACEMENT

CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE WITH SAME TYPE AND RATINGS OF FUSE.

Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".

: The power supply is shown with the marked box.

: AUDIO SIGNAL ROUTE



Switches
CNTL ASSY
SW102 : Phase SW

● Parts sign

MA	:	Mylar film capacitor 100V	Register	:	Unmarked 1/16W ±5% (J)
FL	:	Nonflammable resistor	Capacitor	:	Unmarked voltage 50V
FU	:	Fusible resistor			

4. PCB CONECTION DIAGRAM

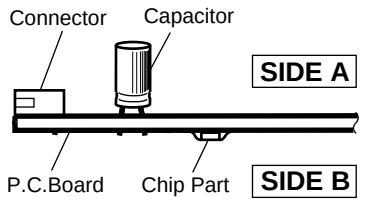
4.1 JACK ASSY

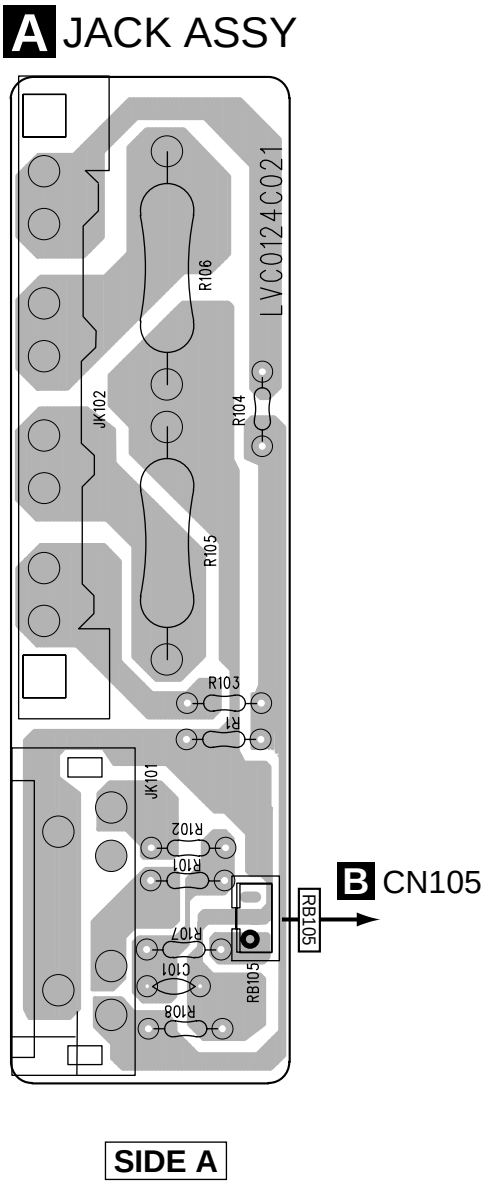
NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

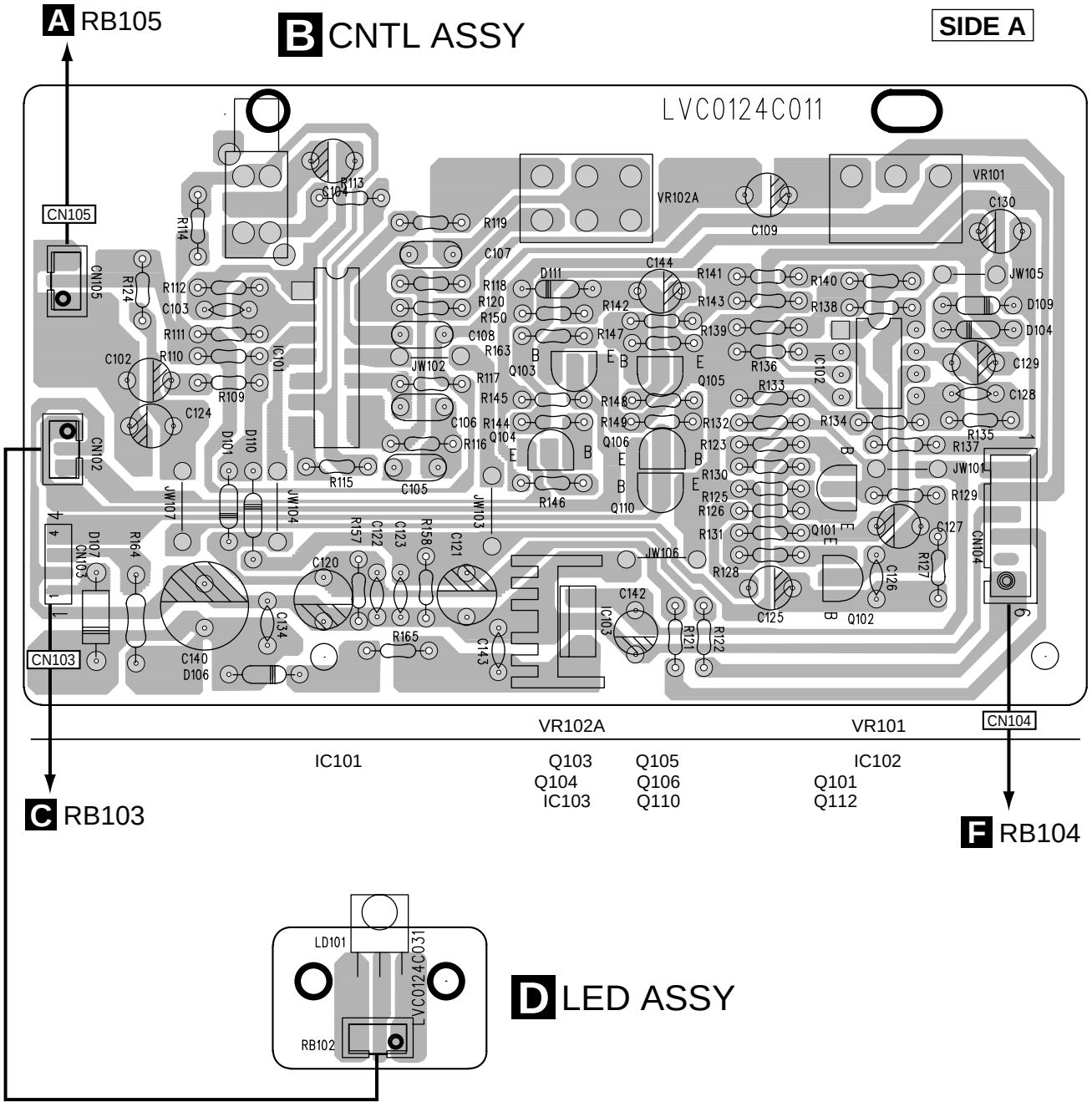
Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.

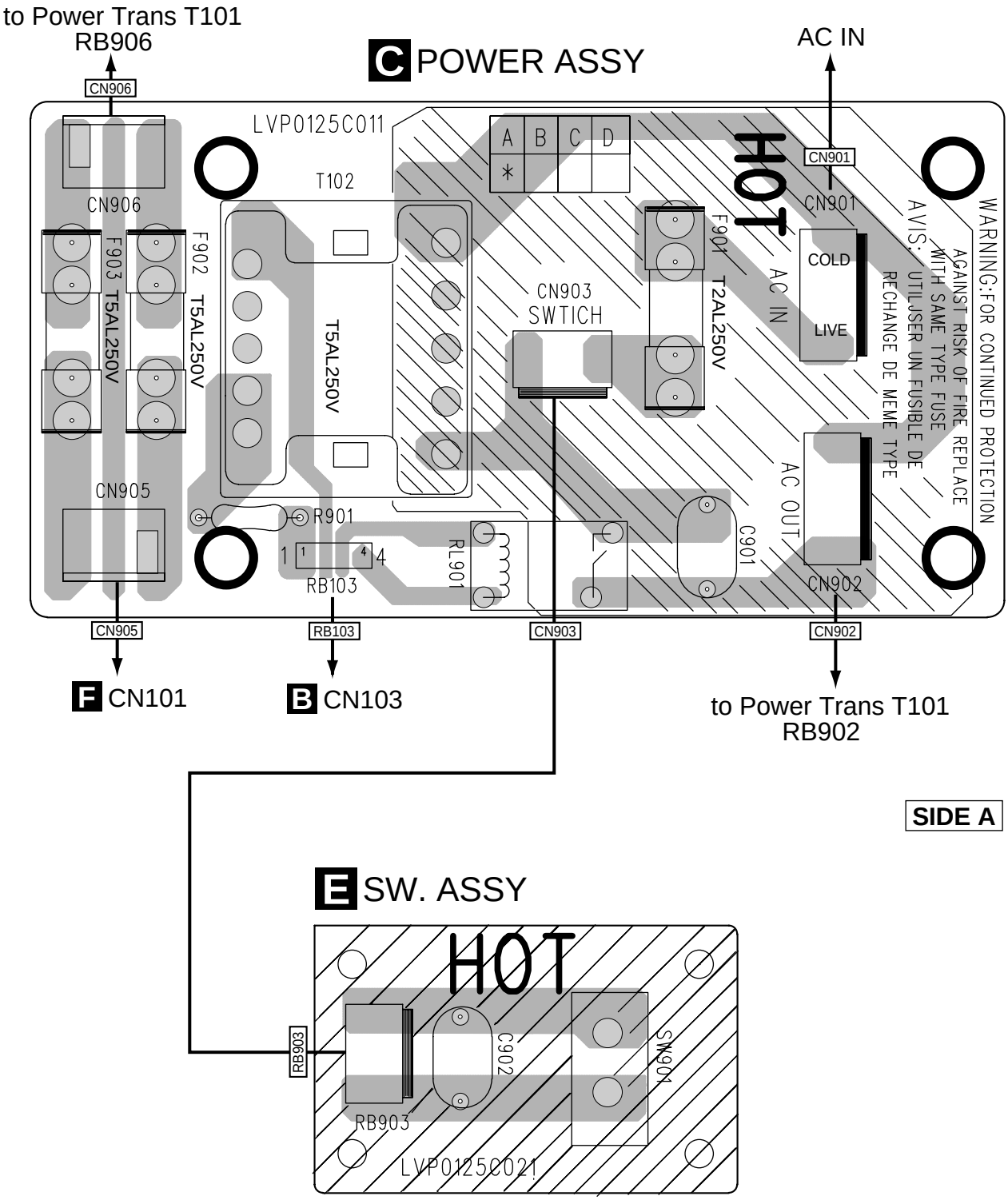




4.2 CNTL and LED ASSYS



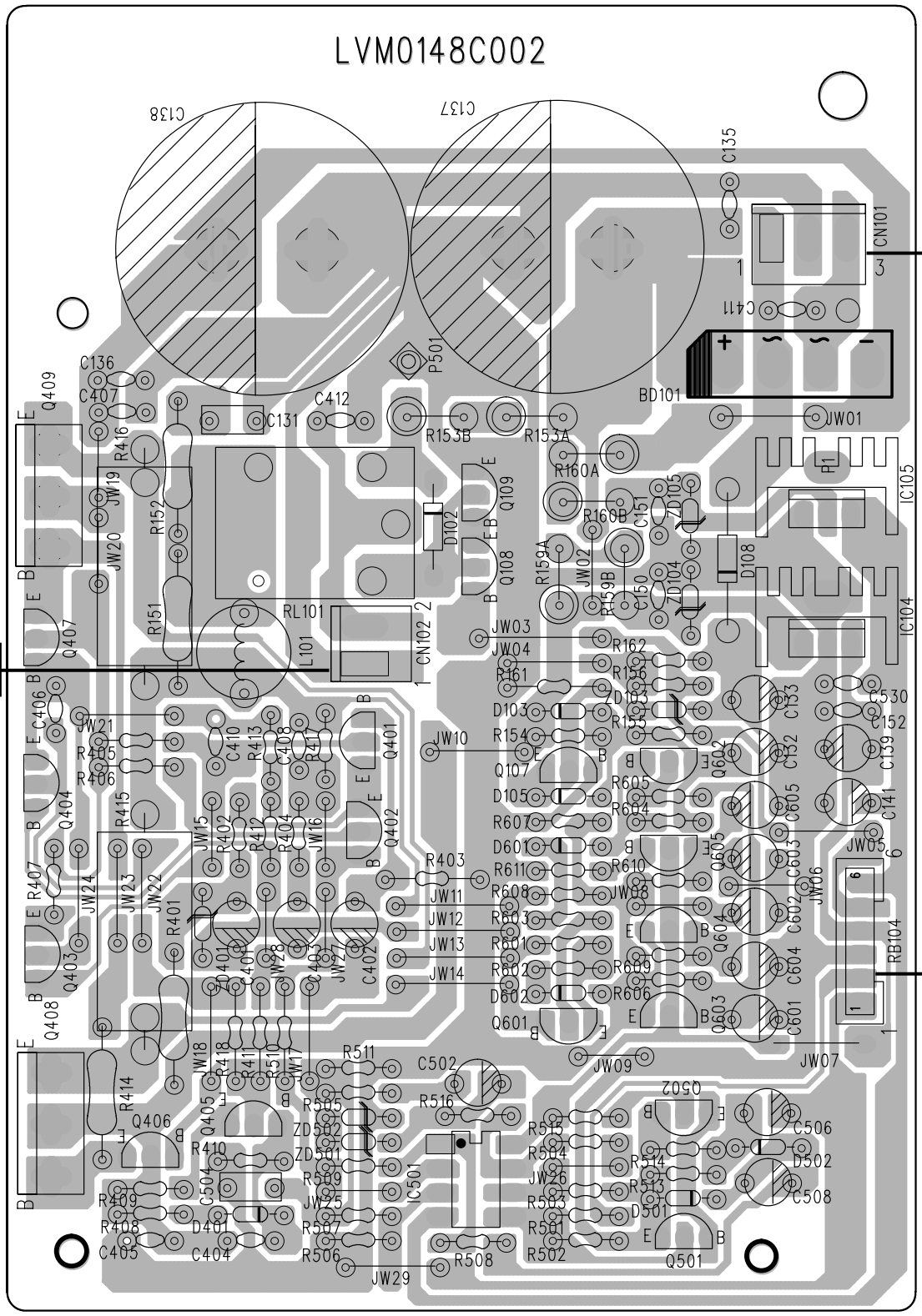
4.3 POWER and SW. ASSYS



4.4 AMP ASSY

F AMP ASSY

SIDE A



Q409 Q407 Q404 Q403 Q408	Q406	Q405	Q401 Q402	Q109 Q108 IC501	Q107 Q601	Q602 Q605 Q604 Q603 Q502 Q501	IC105 IC104

5. PCB PARTS LIST

NOTES: ●*Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
●*The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
●*When ordering resistors, first convert resistance values into code form as shown in the following examples.*
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).
560 Ω → 56×10^1 → 561 ..... RD1/4PU 5 6 1 J
47k Ω → 47×10^3 → 473 ..... RD1/4PU 4 7 3 J
0.5 Ω → R50 ..... RN2H R 5 0 K
1 Ω → 1R0 ..... RS1P 1 R 0 K
Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
5.62k Ω → 562×10^1 → 5621 ..... RN1/4PC 5 6 2 1 F

Mark	No.	Description	Part No.
LSIT OF ASSEMBLIES			
		JACK ASSY	APE0124C021
		CNTL ASSY	APE0124C011
⚠		POWER ASSY	APE0125C002
		LED ASSY	APE0124C031
⚠		SW. ASSY	APE0125C021
⚠		AMP ASSY	APE0148C001

A JACK ASSY

JACK ASSY has no service part.

B CNTL ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC101		TL074CN
	IC102		NJM4558D
⚠	IC103		RHI7809-001
	Q101-Q106,Q110		RAN0945-001
⚠	D107		RAD4001-001
	D101,D104,D109-D111		RAD4148-001
SWITCH			
	SW102	(Phase SW)	MSP0001-016
RESISTORS			
	VR101	(10KA)	MRR0103-004
	VR102	(50KB)	MRR0503-012

C POWER ASSY

Mark	No.	Description	Part No.
RELAY and TRANSFORMER			
⚠	RL901		MRL2212-A04
⚠	T102	(Sub Power Transformer)	TTB2311C001
CAPACITOR			
⚠	C901		PVS0003-103
RESISTOR			
⚠	R901		QHS0250-479

D LED ASSY

LED ASSY has no service part.

E SW. ASSY

Mark	No.	Description	Part No.
SWITCH			
⚠	SW901	(Power SW)	MSP0001-008
CAPACITOR			
⚠	C902		PVS3959-102

F AMP ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC501		NJM4558D
⚠	IC104		RHI7815-001
⚠	IC105		RHI7915-001
	Q401,Q402,Q405,Q602		2SA733-P/Q
	Q407		RHP0965-001
	Q108,Q109,Q403,Q404,Q501		RAN0945-001
	Q502,Q601,Q603-Q605		RAN0945-001
	Q406		RHN2235-001
⚠	Q408		RHN5198-001
⚠	Q409		RHP1941-001
	D103,D105,D401,D501,D502		RAD4148-001
	D601,D602		RAD4148-001
	D102,D108		RAD4001-001
⚠	RS402		RHD0402-101
	ZD104,ZD105		HZ33EB
	ZD501,ZD502		MTZJ2.4A
	ZD401		MTZJ12B
	ZD103		MTZJ18B
RELAY			
⚠	RY101		MRL2212-005
CAPACITORS			
	C137,C138		PJE3956-103
RESISTORS			
⚠	R407-R409		QAM0650-510
⚠	R414		QAF0250-301
⚠	R415,R416		QHE5050-228

6. ADJUSTMENT

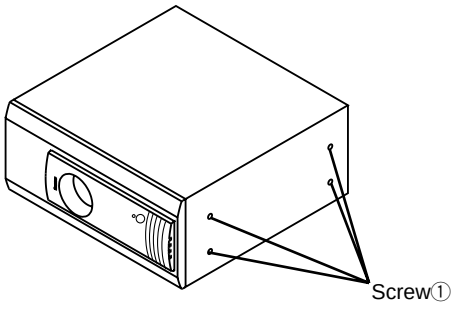
There is no information to be shown in this chapter.

7. GENERAL INFORMATION

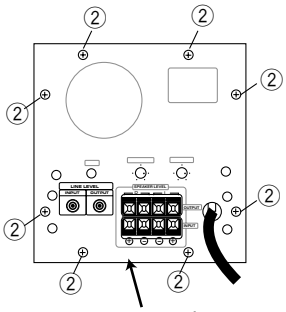
7.1 DISASSEMBLY

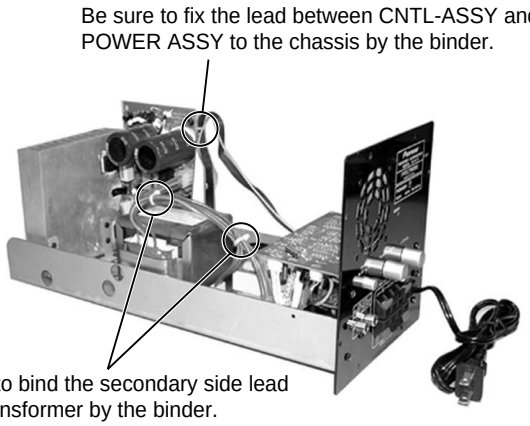
■ Removing the Amplifier Assy

1) The Amplifier Assy is attached to the cabinet by 4 external screw ①. To detach it, pull down the subwoofer toward the left side. Then unfasten those screws ① (× 4)

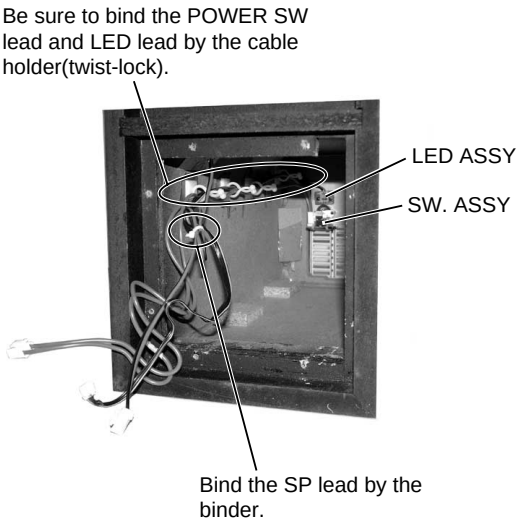


2) Stand up the speaker again. After unfastening the rear panel screw ② (× 8), pull straight the Amplifier Assy toward back about 13cm. Then remove the connecting cord of SW. Assy and LED Assy. Next, pull out the Amplifier Assy and remove the speaker cords.




Be sure to fix the lead between CNTL-ASSY and POWER ASSY to the chassis by the binder.
Be sure to bind the secondary side lead of the transformer by the binder.

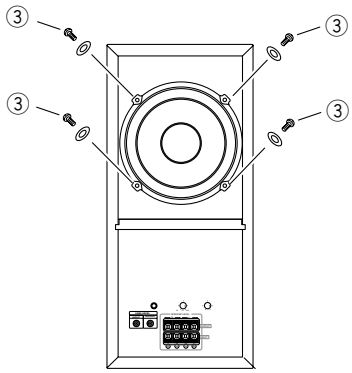
3) The SW. Assy and LED ASSY is attached to the front panel by each 2 screws. To detach them, remove the Amplifier Assy first. Then unfasten each screws from the cabinet back side.



■ Removing the Subwoodser

1) The speaker element is attached to the back board by 4 external screws ③ and washers. To detach it, unfasten those screws and washers.

2) When attaching the speaker, face its terminal downward. (Screws must be used with washers.)



■ Removing the Front Panel

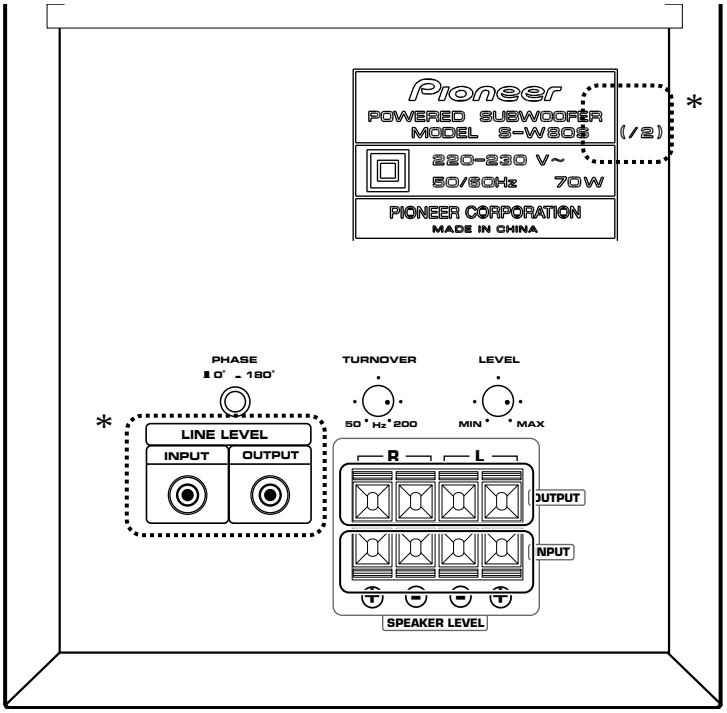
The front panel is attached to the baffle by press-fitting. To detach it, pry it open by inserting a flat blade screwdriver into lower side.

7.2 MODEL DISTINCTION

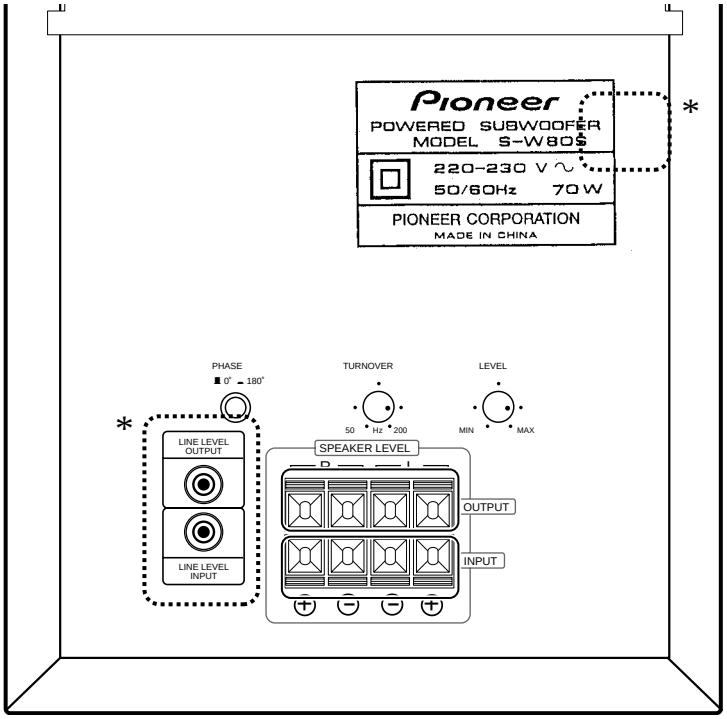
The distinction between S-W80S/MLXTW(New Model) and S-W80S/MLXCN(Old Model) are following table and figure(* mark).

MODEL	S/M Order No.	MODEL LABEL	Direction of the LINE terminal
S-W80S/MLXTW (New)	RRV2591	"(/2) mark outside the model label	lateral
S-W80S/MLXCN (Old)	RRV2407	"No mark outside the model label	vertical

Note :
There is no "(/2)"mark addition to the registered model name of S-W80S/MLXTW.
The distinction between new and old registered model name is only model type.



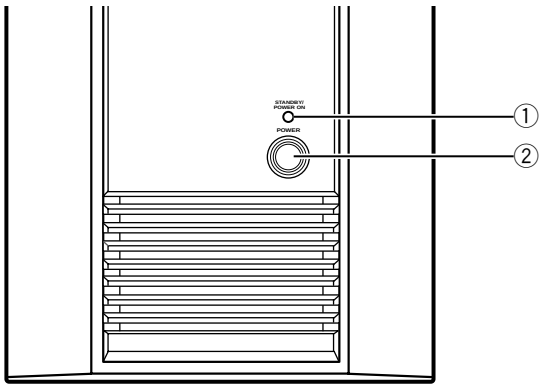
S-W80S/MLXTW(New Model)



S-W80S/MLXCN(Old Model)

8. PANEL FACILITIES

FRONT PANEL

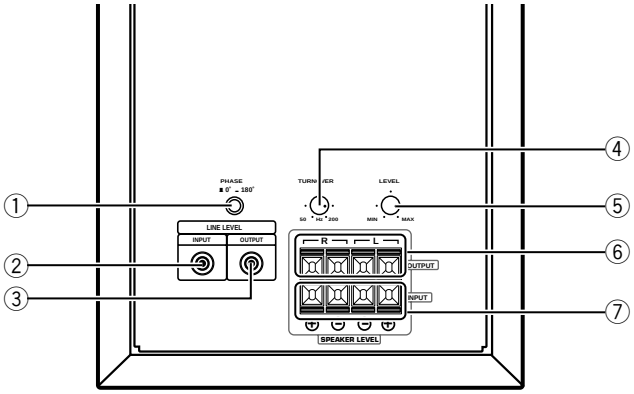


① **Power Indicator (STANDBY/POWER ON)**
When power is switched on, the power indicator lights green. If no signal is present for more than 8 minutes, the subwoofer automatically reverts to standby mode and the power indicator lights red. If, subsequently, a signal is received, power automatically comes back on and the power indicator lights green.

* If you are not using the unit for an extended period of time, please switch off using the power switch, and make sure that the power indicator goes out.

② **Power switch (POWER)**
When pressed, power is turned ON; when pressed again, power is turned OFF.

REAR PANEL



① **Phase switch (PHASE 0° / 180°)**
When depressed (180°), the output phase becomes the reverse of the input signal, and when raised (0°), it is in the same phase as the input signal.

- Normally, the switch is set to (0°).
  But when the sound connection between the subwoofer and the left and right speakers sounds unnatural, try switching to 180° and set the switch in the position where the sound is natural.

② **Line Level Input terminal (LINE LEVEL INPUT)**
Connects to the stereo amplifier's SUBWOOFER PRE-OUT terminal, with the specially provided RCA plug cord.

③ **Line Level Output terminal (LINE LEVEL OUTPUT)**
Used for connecting other equipment through the amplifier.

④ **Turnover knob (TURNOVER)**
Sets the high limit of the frequency played back by the subwoofer.

- Setting Criteria
  50Hz ..... when the diameter of the left/right speakers is 20 cm or more.
  100Hz ..... when the diameter of the left/right speakers is 10 – 25 cm.
  200Hz ..... when the diameter of the left/right speakers is 12 cm or less.

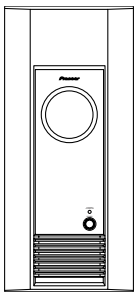
⑤ **Level knob (LEVEL)**
Sets the subwoofer volume.

- Turn the knob slowly from the MIN position.
- With this unit, the bass level can be independently set, so do not turn up the bass on the stereo amplifier.

⑥ **Speaker Level Output terminals (SPEAKER LEVEL OUTPUT)**
When the speakers output terminals on the stereo amplifier are connected to this unit's SPEAKER LEVEL INPUT terminals ⑦ and used as the unit's input signal, these terminals are used to connect the left and right speakers via the unit.

⑦ **Speaker Level Input terminals (SPEAKER LEVEL INPUT)**
Connect to the speakers output terminals on the stereo amplifier, with the specially provided speaker cords.

Service Manual



ORDER NO.
RRV2407

POWERED SPEAKER SYSTEM

S-W80S

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	S-W80S		
MLXCN	◯	AC220-230V	

CONTENTS

1. SAFETY INFORMATION ····· 2
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6. ADJUSTMENT ····· 12
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T – ZZV NOV. 2000 Printed in Japan

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

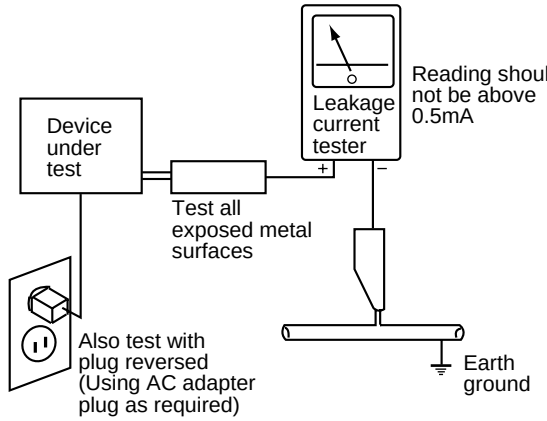
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Reading should not be above 0.5mA
Leakage current tester
+
–
Device under test
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

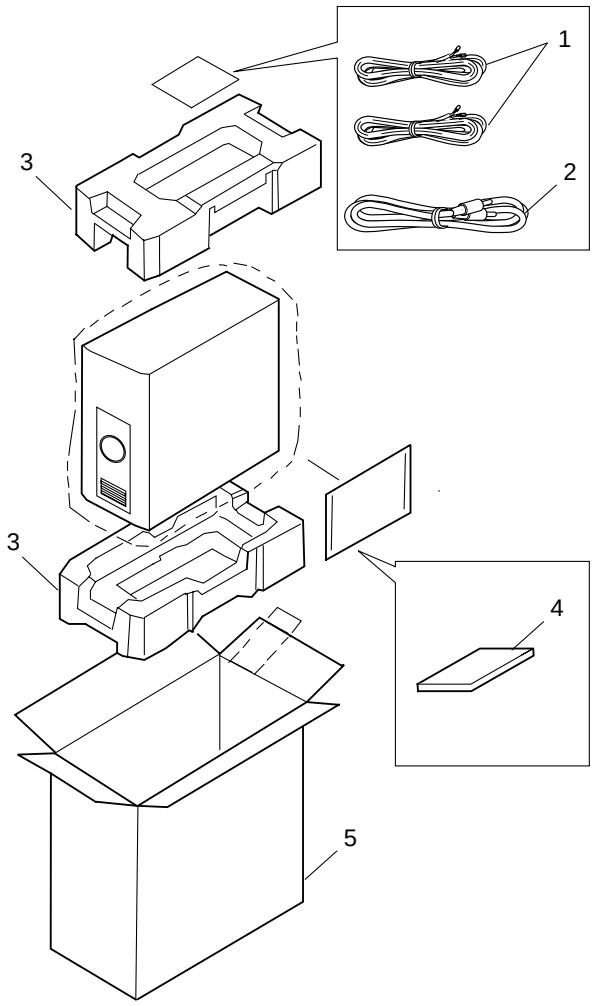
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *Screws adjacent to ▼ mark on the product are used for disassembly.*

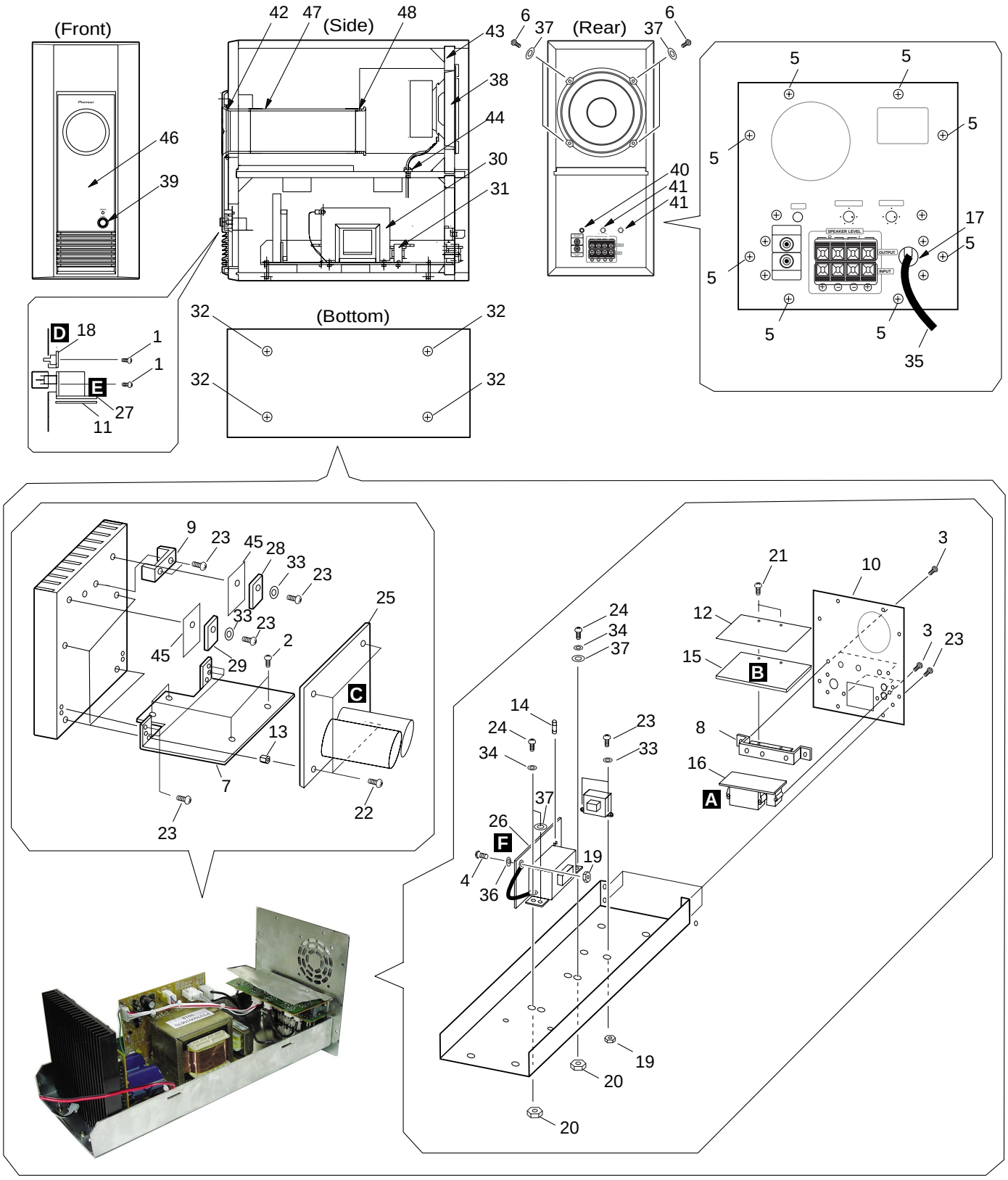
2.1 PACKING



■ PACKING PARTS LIST

Mark	No.	Description	Part No.
	1	Speaker Cord	305131
	2	RCA Pin Cord	305232
	3	Cushion	305239
	4	Operating Instructions (English, Chinese)	310235
	5	Packing Case	310242

2.2 EXTERIOR

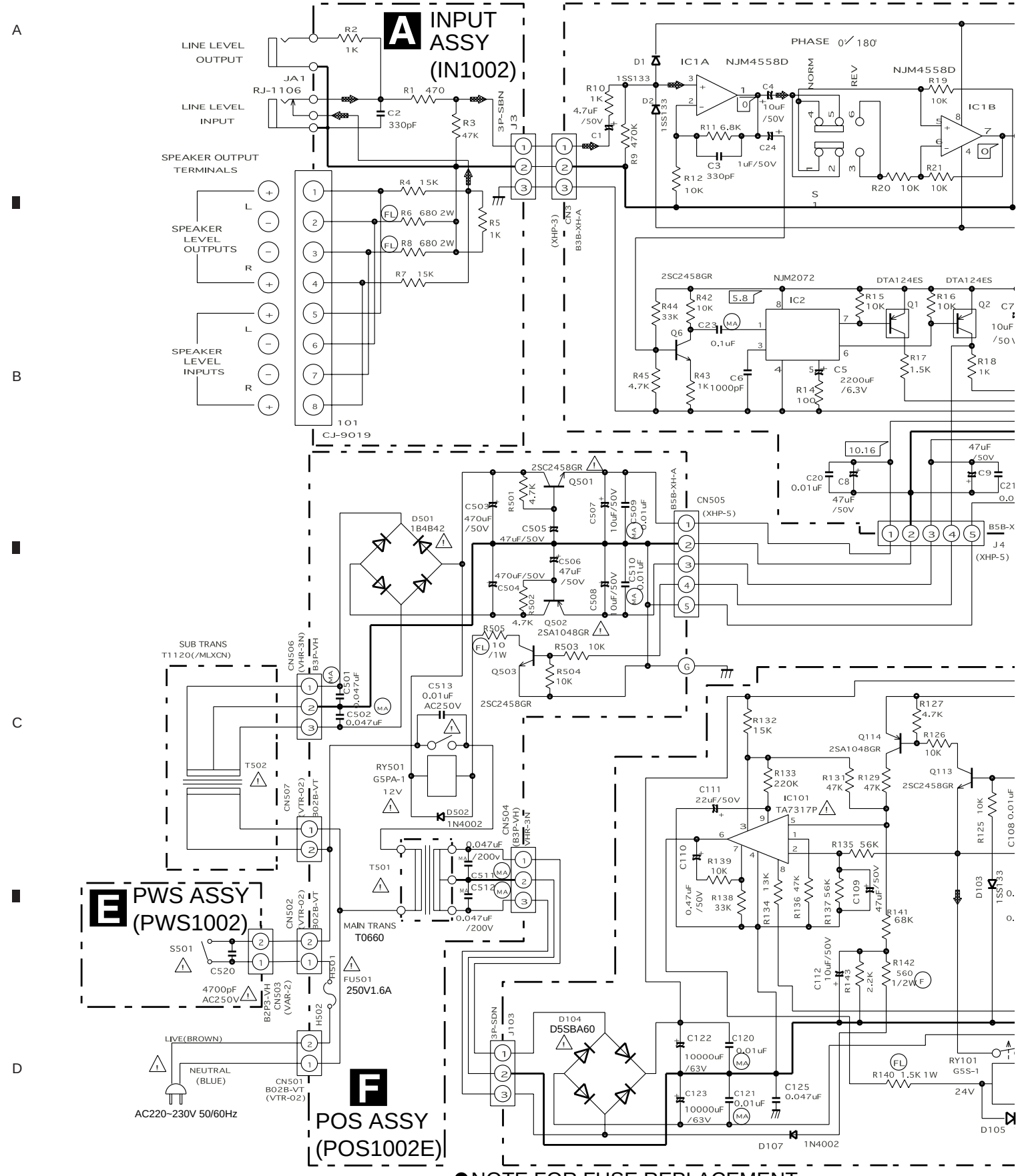


■ EXTERIOR PARTS LIST

Mark	No.	Description	Part No.
	1	Screw (PW SW,LED)	BBZ26P080FMC
	2	Screw (HS Holder)	BBZ30P080FMC
	3	Screw (Terminal,Jack,PCB Hold)	BBZ30P100FZB
	4	Screw (GND Cord)	BMZ30P080FMC
	5	Screw (Rear Panel)	BYC30P100FZK
	6	Screw (Speaker)	BYC40P200FZB
	7	HS Holder	E305002
	8	PCB Holder	E305003
	9	TS Holder	E305005
	10	Rear Panel	E305006B
	11	Insulation Sheet (PWS ASSY)	E305033
	12	Shield Sheet (HEAD ASSY)	E305034
	13	Spacer (Heat Sink)	E305518
⚠	14	Fuse (FU501 : 1.6A250V)	FSE1.6A250
	15	HEAD ASSY	HEAD1002
	16	INPUT ASSY	IN1002
	17	Cord Bush (Power Cord)	KBUF41
	18	LED ASSY	LED1002
	19	Nut (GND Cord,Sub PWR. T.)	NB30FMC
	20	Nut (Main PWR. T.)	NB40FMC
	21	Screw (HEAD ASSY)	PBZ26P080FZK
	22	Screw (POA ASSY)	PMZ30P060FMC
	23	Screw (TR,TS,HS,Sub PWR. T.)	PMZ30P100FMC
	24	Screw (Main PWR. T.)	PMZ40P120FMC
	25	POA ASSY	POA1002
⚠			
	26	POS ASSY	POS1002E
	27	PWS ASSY	PWS1002
⚠	28	Transistor (Q111)	Q2SC51980
⚠	29	Transistor (Q112)	Q2SA19410
⚠	30	Power Transformer (T501)(Main)	T0660
⚠	31	Power Transformer (T502)(Sub)	T1120
	32	Screw (Network Assy)	TMZ40P300FZB
	33	Washer (Tr,Sub PWR T.)	WC30FMC
	34	Washer (Main PWR T.)	WC40FMC
⚠	35	AC Power Cord	WPPHP-205
	36	Washer (GND Cord)	WS30FMC
	37	Washer (Main PWR. T.)	WS40FMC
	38	Speaker	305113
	39	Power Switch Knob	305121
	40	Phase Switch Knob	305122
	41	Volume Knob	305123
	42	Packing (Front Panel)	305212
	43	Packing (Speaker)	305216
	44	Cord Bush (SP Cord)	926209
	45	TR Insulating Sheet	ZCW-4
	46	Front Panel	305109
	47	Paper Duct	305211
	48	Duct Ring	305110

3. SCHEMATIC DIAGRAM

■ INPUT, HEAD, POA, LED, PWS and POS ASSYS

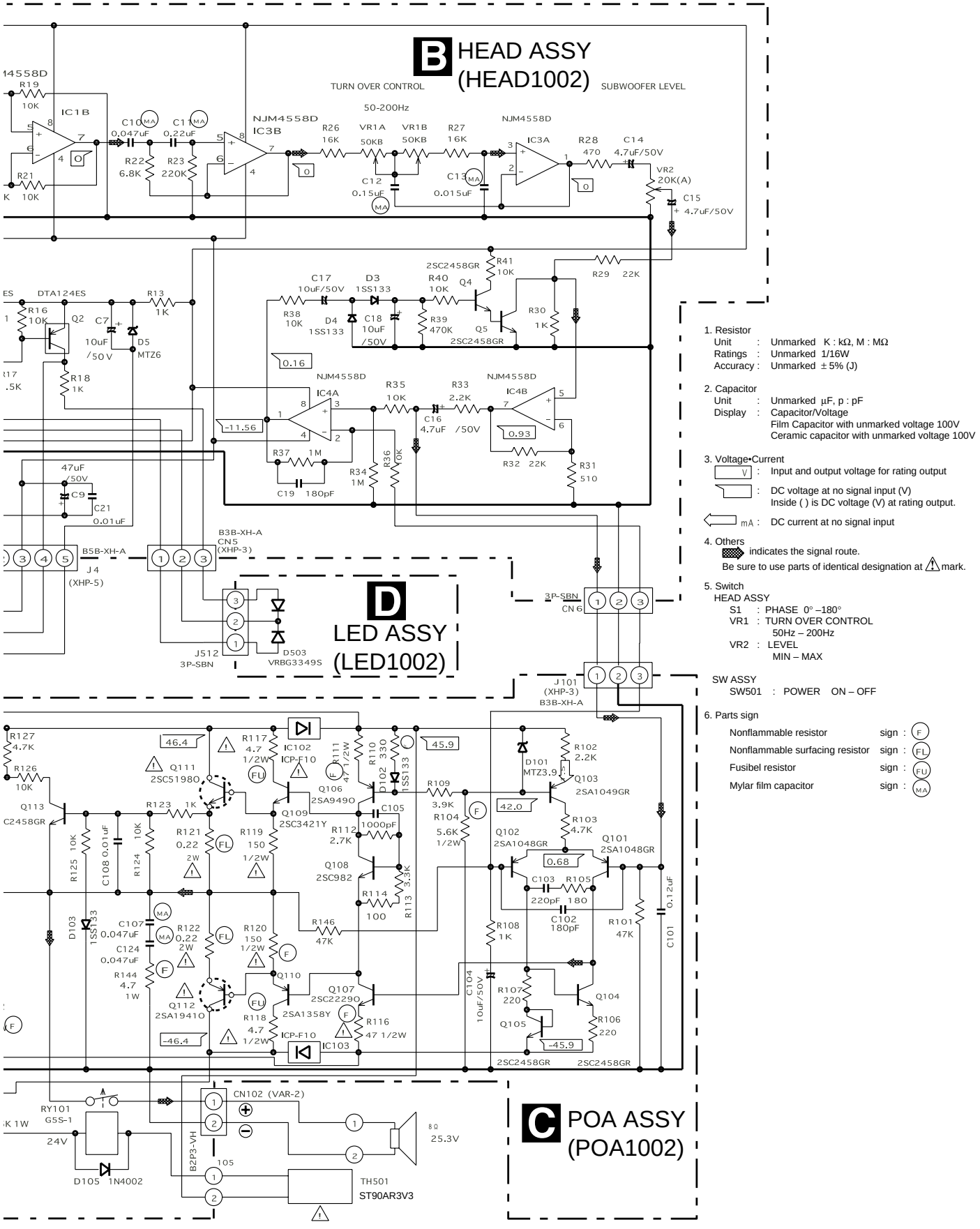


● NOTE FOR FUSE REPLACEMENT

CAUTION FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE AND RATINGS ONLY.

Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".

: AUDIO SIGNAL ROUTE



4. PCB CONNECTION DIAGRAM

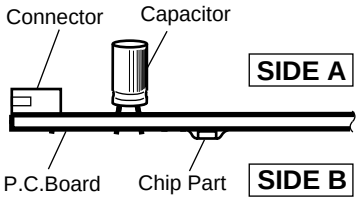
4.1 INPUT ASSY

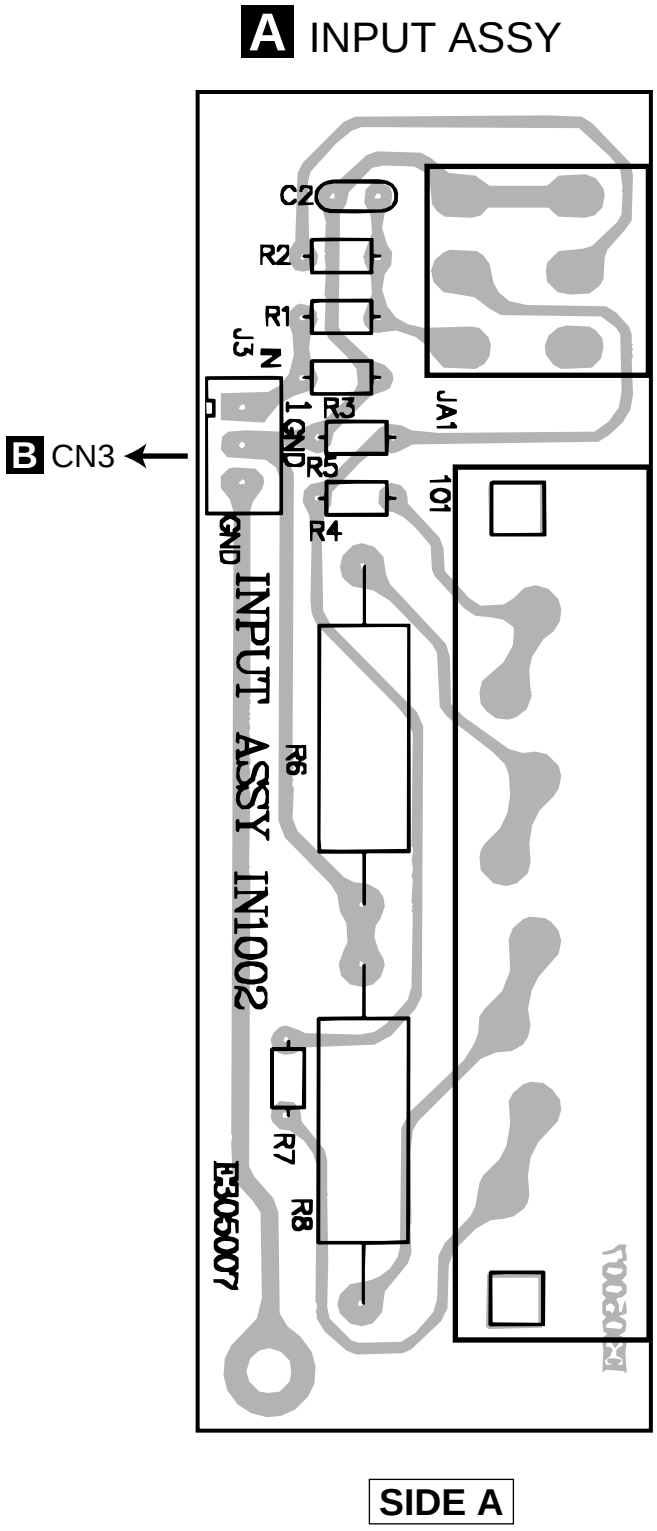
NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

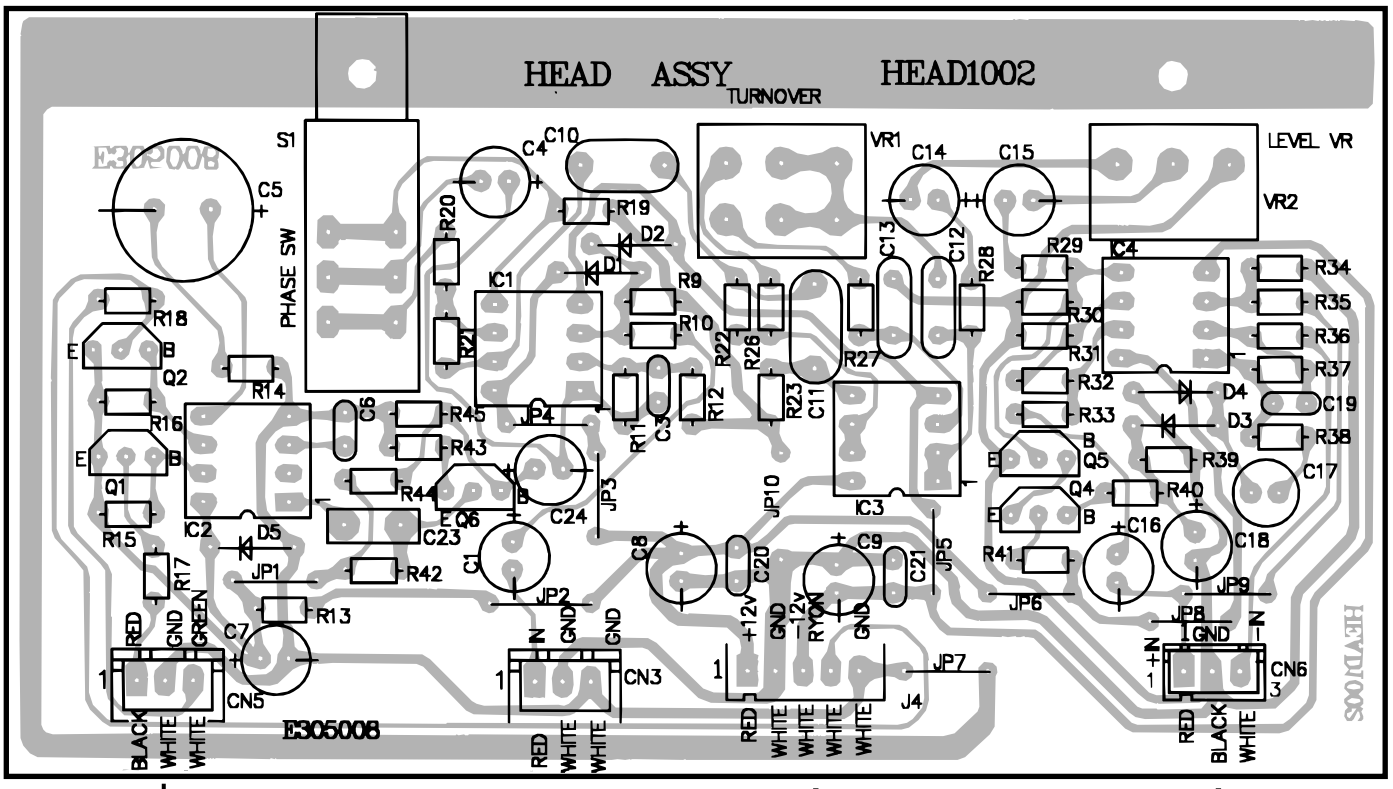
3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



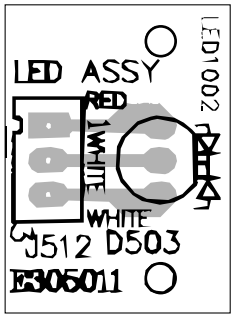


4.2 HEAD ASSY and LED ASSY

B HEAD ASSY



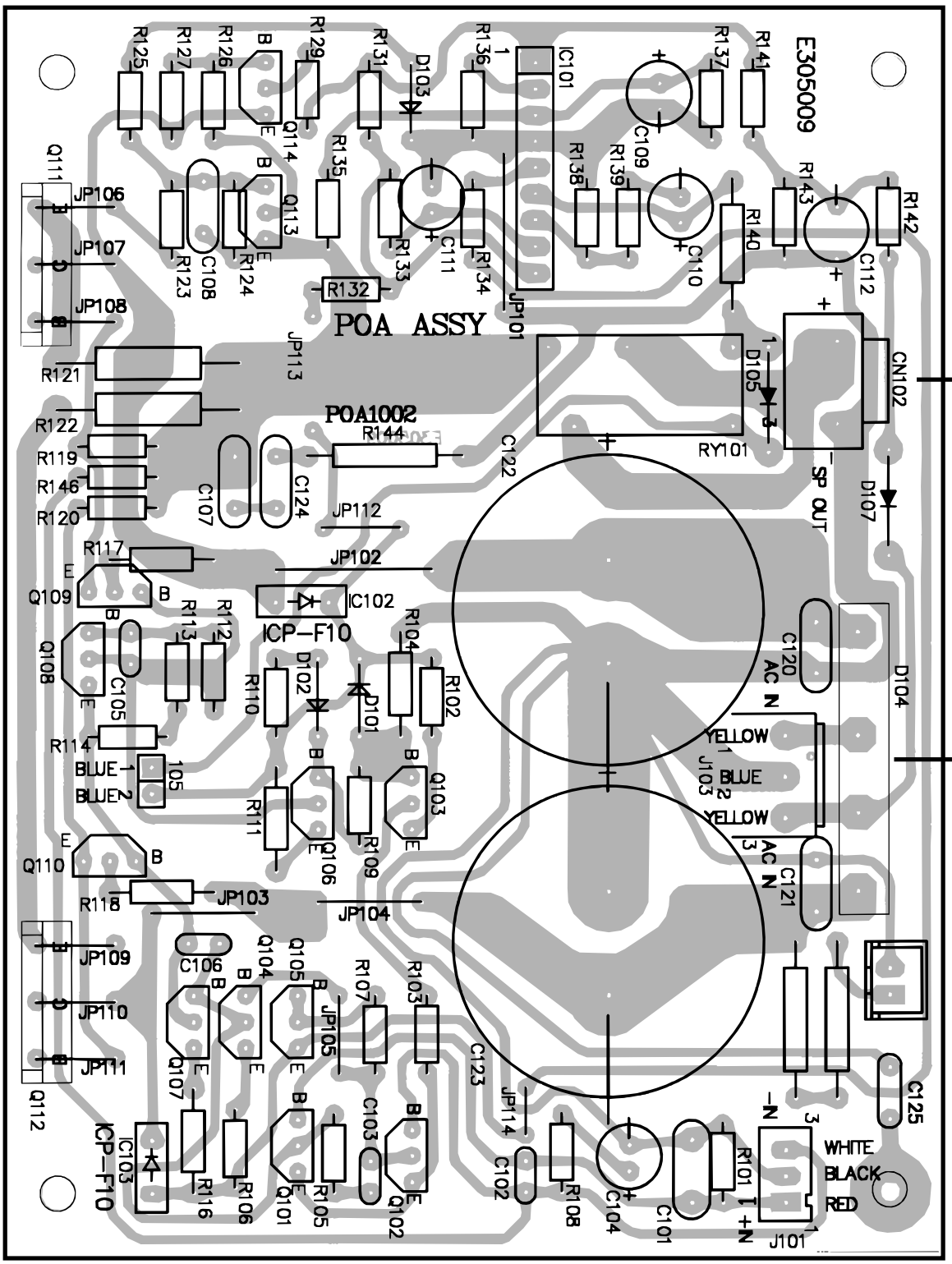
D LED ASSY



SIDE A

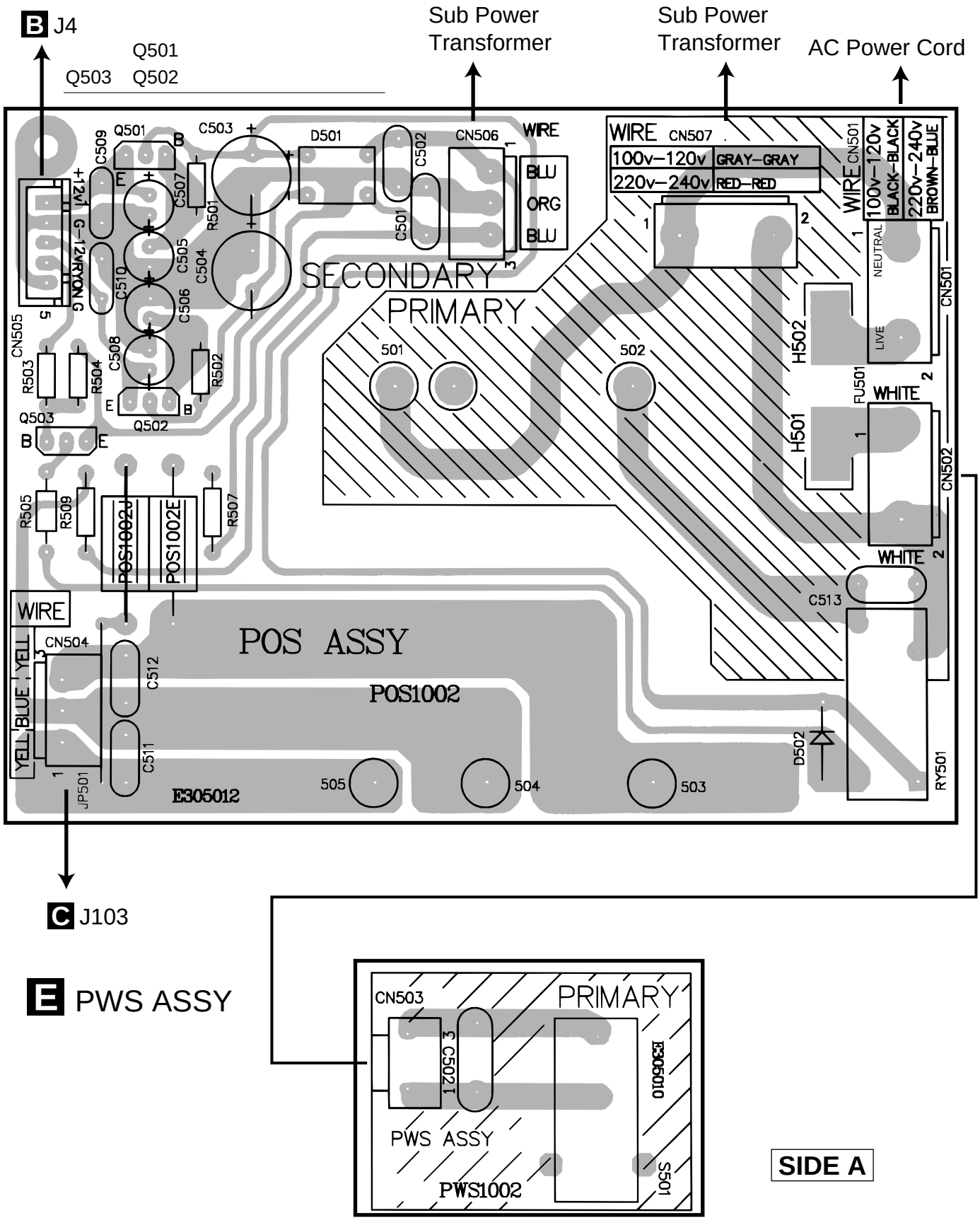
4.3 POA ASSY

C POA ASSY



4.4 POS ASSY and PWS ASSY

F POS ASSY



SIDE A

5. PCB PARTS LIST

NOTES: ●*Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
●*The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
●*When ordering resistors, first convert resistance values into code form as shown in the following examples.*
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	→	*56×10^1*	→	*561* ..... *RD1/4PU [5][6][1] J*
47k Ω	→	*47×10^3*	→	*473* ..... *RD1/4PU [4][7][3] J*
0.5 Ω	→	*R50*		..... *RN2H [R][5][0] K*
1 Ω	→	*1R0*		..... *RS1P [1][R][0] K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	→	*562×10^1*	→	*5621* ..... *RN1/4PC [5][6][2][1] F*

Mark	No.	Description	Part No.
LSIT OF ASSEMBLIES			
		INPUT ASSY	IN1002
		HEAD ASSY	HEAD1002
		POA ASSY	POA1002
		PWS ASSY	PWS1002
		LED ASSY	LED1002
		POS ASSY	POS1002E
A INPUT ASSY			
		INPUT ASSY has no service part.	
B HEAD ASSY			
RESISTORS			
		VR1	RK1632503B
		VR2	RK1631203A
C POA ASSY			
SEMICONDUCTORS			
⚠		IC102,IC103	IICP-F10
⚠		IC101	ITA7317P
		Q101,Q102,Q114	Q2SA1048GR
		Q103	Q2SA1049GR
		Q110	Q2SA1358Y
		Q106	Q2SA9490
		Q107	Q2SC22290
		Q104,Q105,Q113	Q2SC2458GR
		Q109	Q2SC3421Y
		Q108	Q2SC982
⚠		D104	DD5SB40
		D101	DMTZ3.9B
		D105,D107	D1N4002
		D102,D103	D1SS133
RELAY			
		RY101	YG5S-1

Mark	No.	Description	Part No.
D LED ASSY			
		LED ASSY has no service part.	
E PWS ASSY			
		PWS ASSY has no service part.	
F POS ASSY			
SEMICONDUCTORS			
⚠		Q502	Q2SA1048GR
⚠		Q501	Q2SC2458GR
		Q503	Q2SC2458GR
⚠		D501	D1B4B42
		D502	D1N4002
RELAY			
⚠		RY501	YG5PA-1
OTHERS			
⚠		TH501 (Thermal Protector)	ST90AR3U3

6. ADJUSTMENT

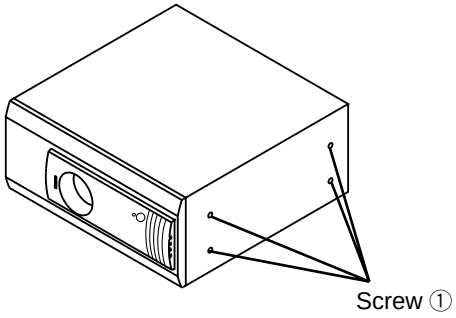
There is no information to be shown in this chapter.

7. GENERAL INFORMATION

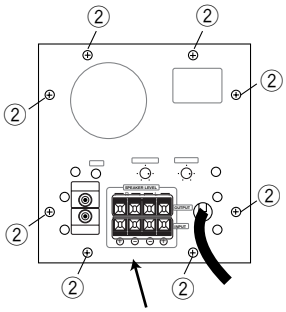
7.1 DISAASEMBLY

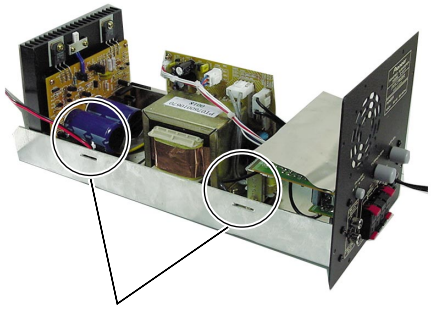
■ Removing the Amplifier Assy

1) The Amplifier Assy is attached to the cabinet by 4 external screw ①. To detach it, pull down the subwoofer toward the left side. Then unfasten those screws ① (× 4)



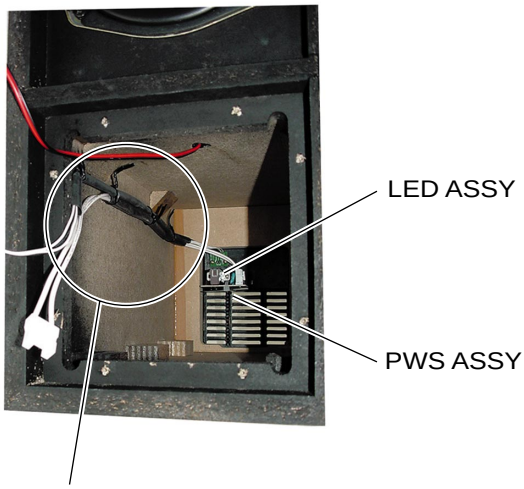
2) Stand up the speaker again. After unfastening the rear panel screw ② (× 8), pull straight the Amplifier Assy toward back about 13cm. Then remove the connecting cord of PWS Assy and LED Assy. Next, pull out the Amplifier Assy and remove the speaker cords.





When mouting the Amplifier Assy, be sure to make the binding process for the speaker cord, power SW cord, and LED cord by the binder.

3) The PWS Assy and LED ASSY is attached to the front panel by each 2 screws. To detach them, remove the Amplifier Assy first. Then unfasten each screws from the cabinet back side.

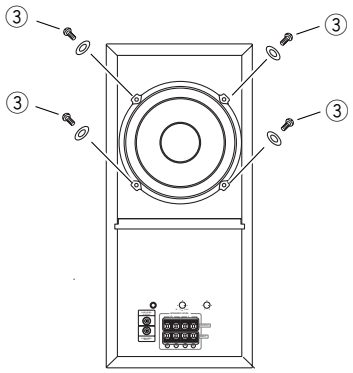


When mounting, be sure to make the binding process for the Power SW cord and LED cord by vinyl tape.

■ Removing the Subwoofer

1) The speaker element is attached to the back board by 4 external screws ③ and washers. To detach it, unfasten those screws and washers.

2) When attaching the speaker, face its terminal downward. (Screws must be used with washers.)

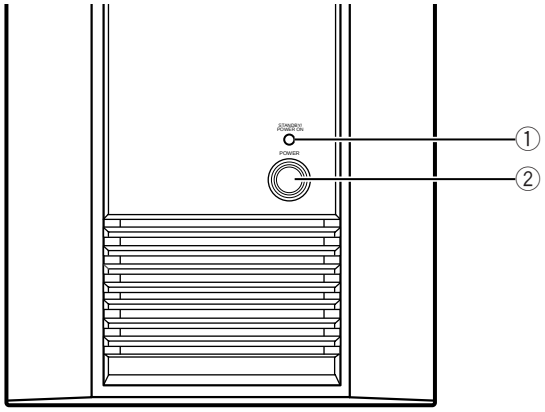


■ Removing the Front Panel

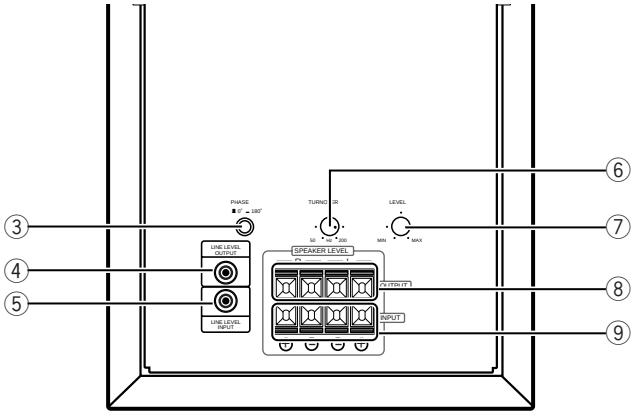
The front panel is attached to the baffle by press-fitting. To detach it, pry it open by inserting a flat blade screwdriver into lower side.

8. PANEL FACILITIES AND SPECIFICATIONS

FRONT PANEL



REAR PANEL



① Power Indicator (STANDBY/POWER ON)

When power is switched on, the power indicator lights green. If no signal is present for more than 8 minutes, the subwoofer automatically revents to standby mode and the power indicator lights red. If, subsequently, a signal is received, power automatically comes back on and the power indicator lights green.

* If you not using the unit for an extended period of time, please switch off using the power switch, and make sure that the power indicator goes out.

② Power Indicator (STANDBY/POWER ON)

When pressed, power is turned ON; when pressed again, power is turned OFF.

③ Phase Switch (PHASE ▮ 0° / ▂ 180°)

When depressed (▂ 180º), the output phase becomes the reverse of the input signal, and when raised (▮ 0º), it is in the same phase as the input signal.

- Normally, the switch is set to (▮ 0º).
  But when the sound connection between the subwoofer and the left and right speakers sounds unnatural, try switching to 180º and set the switch in the position where the sound is natural.

④ Line Level Output terminal (LINE LEVEL OUTPUT)

Used for connection other equipment through the amplifier.

⑤ Line Level Input terminal (LINE LEVEL INPUT)

Connectors to the stereo amplifier's SUBWOOFER PRE-OUT terminal, with the specially provided RCA plug cord.

⑥ Turnover knob (TURNOVER)

Sets the high limit of the frequency played back by the subwoofer.

- Setting Criteria
  50Hz ..... when the diameter of the left/right speakers is 20 cm or more.
  100Hz ..... when the diameter of the left/right speakers is 10-25 cm.
  200Hz ..... when the diameter of the left/right speakers is 12 cm or less.

⑦ Level knob (LEVEL)

Sets the subwoofer volume.

- Turn the knob slowly from the MIN position.
- With the unit, the bass level can be independently set, so do not turn up the bass on the stereo amplifier.

⑧ Speaker Level Output terminals (SPEAKER LEVEL OUTPUT)

When the speakers output terminals on the stereo amplifier are connected to this unit's SPEAKER LEVEL INPUT terminals ⑨ and used as the unit's input signal, these terminals are used to connected the left and right speakers via the unit.

⑨ Speaker Level Input terminals (SPEAKER LEVEL INPUT)

Connect to the speakers output terminal on the stereo amplifier, with the specially provided speaker cords.

■ SPECIFICATIONS

Cabinet ..... Floor type with bass-reflex system
Speaker (Magnetically shielded type) ..... 16cm cone type
Power Amplifier
Continuous Power Output (RMS) 80W/8Ω (30-200Hz)
Total Harmonic Distortion 0.5%
• *Above specifications are for when power supply is 230V.*
(30-200Hz, 8Ω, 20W)

Input (sensitivity at 100Hz/impedance)
SPEAKER LEVEL ..... 1.6V+1.6V/15kΩ)
(both channels in-phase)
LINE LEVEL (RCA jack) ..... 160mV/50kΩ)
Turnover Frequency ..... 50-200Hz (continuously variable)
Outline Dimensions ..... 190(W) × 420(H) × 430 (D) mm
Weight (without package) 12.6kg
Power Requirements ..... 220-230V ~, 50-60Hz
Power Consumption 70W
Power Consumption in Standby mode 1W

Accessories
Speaker cords 2
RCA plug cord 1
Operating instructions 1

Note:
Specifications and design subject to possible modification without notice,due to improvements.

■ Accessories

• Speaker Cord ×2
305131 (L=3m)

• RCA Pin Cord ×1
305232 (L=3m)